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EXAMINER	
LIN, KENNY S	
ART UNIT	**PAPER NUMBER**
2152	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/650,254	CHIN, HON WAH	
	Examiner	Art Unit	
	Kenny Lin	2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/12/2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,7 and 9-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,7 and 9-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 7 and 9-21 are presented for examination. Claims 2-6 and 8 are canceled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 7, 9-10, 13-14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Judd et al (Judd), US 5,465,251, in view of Saleh et al (Saleh), US 6,801,496, and Matsuzawa et al (Matsuzawa), US 6,389,023.

4. Judd and Saleh were cited in the previous office action.

5. As per claim 1, Judd taught the invention as claimed including an address protocol for forwarding a message packet from a source node to a destination node along a sequence of communicatively coupled nodes functioning as a linear chain network (col.2, lines 26-31, col.5, lines 55-59; strings), the address protocol comprising:

a. A relative source address field programmed with an initial value (0h) at the source node corresponding to a destination node that is a preselected number of nodes

away from the source node along the linear chain network (col.2, lines 3-18, 32-41, col.6, lines 33-35, col.7, lines 64-67, col.8, lines 43-50);

b. A relative destination address field containing a counter and a directional code corresponding to a port of the source node from which the message packet is to be sent along the linear chain network (col.2, lines 3-18, 32-41, col.7, lines 51-67, col.6, lines 33-35, 38-41, 53-55, col.8, lines 43-50);

c. Wherein the counter is decremented by a preselected step in value at each node the message packet is forwarded to along the chain network until the counter reaches the initial value, thereby indicating that the destination node has been reached (col.2, lines 3-18, 32-41, col.7, lines 55-63, col.8, lines 44-61; if Hi_digit = 0h; accept the frame);

d. Wherein the destination node does not require address information in addition to the counter reaching the initial value to accept the message packet (col.2, lines 36-39).

6. Judd did not specifically teach an identifier field containing an identifier, wherein the identifier indicates whether the message packet contains relative address protocol information and that the counter is incremented in value. However, since Judd taught that the counter is programmed with the initial value and the counter is **modified** at each node (col.2, lines 3-18, 31-41), it would have been obvious to increment the counter as a method of modifying the counter especially since decrementing is simply incrementing negative values. Saleh taught to increment counters at each node (col.8, lines 44-48). It would have been obvious to one of

ordinary skill in the art at the time the invention was made to combine the teachings of Judd and Saleh because Saleh's teaching of setting the counter with a zero initial value and incrementing it at each node enables Judd's method to reach the same result by incrementing counter till it is equal to non-zero initial value instead of counting down to zero. Judd and Saleh did not specifically an identifier field containing an identifier, wherein the identifier indicates whether the message packet contains relative address protocol information. Matsuzawa taught to use an identifier field storing upper layer protocol identification (col.4, lines 37-44, col.5, lines 61-64, col.8, lines 54-67, col.9, lines 1-19, 26-34). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Judd, Saleh and Matsuzawa because Matsuzawa's teaching of using identifier field enables the packets to store information regarding the upper level protocol and enables Judd and Saleh's packets to be transferred using the identified protocol (col.13, lines 4-8).

7. As per claim 14, Judd taught the invention as claimed including a method of sending a message packet along a portion of a network functioning as a linear chain network from a source node to a destination node using an address protocol having an identifier (col.2, lines 26-31, col.5, lines 55-59, col.6, lines 14-15), a relative source address field for storing an initial value (col.2, lines 3-18, 32-41, col.7, lines 64-67), and a relative destination address field containing a counter and a directional code corresponding to a port of the source node from which the message packet is to be sent along the linear chain network (col.2, lines 3-18, 32-41, col.7, lines 51-67, col.6, lines 33-35, 38-41, 53-55, col.8, lines 43-50), the method comprising the steps of:

a. Selecting the initial value to be a function of a desired number of node hops along the linear chain network from the source node (col.2, lines 3-18, 32-41, col.7, lines 64-67);

b. Programming the relative source address field to have the initial value (col.2, lines 3-18, 32-41, col.7, lines 64-67);

c. Adjusting the counter by a preselected step in value at each node that the message packet is forwarded to (col.2, lines 3-18, 32-41, col.8, lines 44-61); and

d. Accepting the message packet at a destination node when the counter value reaches the initial value, without requiring address information in addition to the counter reaching the initial value to accept the message packet (col.2, lines 3-18, 32-41, col.7, lines 55-63, col.8, lines 44-61; if Hi_digit = 0h; accept the frame),

e. Wherein the preselected step in value is chosen so that the counter reaches the initial value when the packet has completed the desired number of node hops (col.2, lines 3-18, 32-41, col.8, lines 44-61).

8. Judd did not specifically teach an identifier field containing an identifier, wherein the identifier indicates whether the message packet contains relative address protocol information and that adjusting the counter is to increment it. However, since Judd taught that the counter is programmed with the initial value and the counter is **modified** at each node (col.2, lines 3-18, 31-41), it would have been obvious to increment the counter as a method of modifying the counter especially since decrementing is simply incrementing negative values. Saleh taught to increment counters at each node (col.8, lines 44-48). It would have been obvious to one of

ordinary skill in the art at the time the invention was made to combine the teachings of Judd and Saleh because Saleh's teaching of setting the counter with a zero initial value and incrementing it at each node enables Judd's method to reach the same result by incrementing counter till it is equal to non-zero initial value instead of counting down to zero. Judd and Saleh did not specifically an identifier field containing an identifier, wherein the identifier indicates whether the message packet contains relative address protocol information. Matsuzawa taught to use an identifier field storing upper layer protocol identification (col.4, lines 37-44, col.5, lines 61-64, col.8, lines 54-67, col.9, lines 1-19, 26-34). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Judd, Saleh and Matsuzawa because Matsuzawa's teaching of using identifier field enables the packets to store information regarding the upper level protocol and enables Judd and Saleh's packets to be transferred using the identified protocol (col.13, lines 4-8).

9. As per claim 18, Judd taught the invention as claimed including a method of sending a message packet along a chain network having regenerator nodes from a source node to a destination node using an address protocol having an identifier (col.2, lines 26-31, col.5, lines 55-59, col.6, lines 14-15), a relative source address for storing an initial value (col.2, lines 3-18, 32-41, col.7, lines 64-67), and a relative destination address field containing a counter and a directional code corresponding to a port of the source node from which the message packet is to be sent along the linear chain network (col.2, lines 3-18, 32-41, col.7, lines 51-67, col.6, lines 33-35, 38-41, 53-55, col.8, lines 43-50), the method comprising the steps of:

a. Selecting the initial value to be a function of a desired number of node hops along the linear chain from the source node (col.2, lines 3-18, 32-41, col.7, lines 64-67);

b. Adjusting the counter by a preselected step in value at each node that the message packet is forwarded to (col.2, lines 3-18, 32-41, col.8, lines 44-61); and

c. Accepting the message packet at a destination node when the counter value reaches the initial value, without requiring address information in addition to the counter reaching the trigger value to accept the message packet (col.2, lines 3-18, 32-41, col.7, lines 55-67, col.8, lines 44-61; if Hi_digit = 0h; accept the frame); and

d. Wherein the preselected step in value is chosen so that the counter reaches the initial value when the packet has completed the desired number of node hops (col.2, lines 3-18, 32-41, col.8, lines 44-61).

10. Judd did not specifically teach an identifier field containing an identifier, wherein the identifier indicates whether the message packet contains relative address protocol information and that adjusting the counter is to increment it. However, since Judd taught that the counter is programmed with the initial value and the counter is **modified** at each node (col.2, lines 3-18, 31-41), it would have been obvious to increment the counter as a method of modifying the counter especially since decrementing is simply incrementing negative values. Saleh taught to increment counters at each node (col.8, lines 44-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Judd and Saleh because Saleh's teaching of setting the counter with a zero initial value and incrementing it

at each node enables Judd's method to reach the same result by incrementing counter till it is equal to non-zero initial value instead of counting down to zero. Judd and Saleh did not specifically an identifier field containing an identifier, wherein the identifier indicates whether the message packet contains relative address protocol information. Matsuzawa taught to use an identifier field storing upper layer protocol identification (col.4, lines 37-44, col.5, lines 61-64, col.8, lines 54-67, col.9, lines 1-19, 26-34). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Judd, Saleh and Matsuzawa because Matsuzawa's teaching of using identifier field enables the packets to store information regarding the upper level protocol and enables Judd and Saleh's packets to be transferred using the identified protocol (col.13, lines 4-8).

11. As per claim 7, Judd, Saleh and Matsuzawa taught the invention substantially as claimed in claim 1. Judd further taught that the initial value is an integer having an absolute value equal to the desired number of node hops and the counter is changed by a step in value of one at each node (col.7, lines 64-67). Judd did not specifically teach that the change of the counter is an increment in value. However, since Judd taught that the counter is programmed with the initial value and the counter is **modified** at each node (col.2, lines 3-18, 31-41), it would have been obvious to increment the counter as a method of modifying the counter. Saleh taught to increment counters at each node (col.8, lines 44-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Judd, Saleh and Matsuzawa because Saleh's teaching of setting the counter with a zero initial value

and incrementing it at each node enables Judd's method to reach the same result by incrementing counter till it is equal to non-zero initial value instead of counting down to zero.

12. As per claim 9, Judd, Saleh and Matsuzawa taught the invention substantially as claimed in claim 7. Judd did not specifically teach that the counter is initially set to zero and the counter is counted up by one at each node hop until the initial value is reached. However, since Judd taught that the counter is programmed with the initial value and the counter is **modified** at each node (col.2, lines 3-18, 31-41), it would have been obvious to increment the counter as a method of modifying the counter. Saleh taught to increment counters at each node (col.8, lines 44-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Judd, Saleh and Matsuzawa because Saleh's teaching of setting the counter with a zero initial value and incrementing it at each node enables Judd's method to reach the same result by incrementing counter till it is equal to non-zero initial value instead of counting down to zero.

13. As per claim 10, Judd, Saleh and Matsuzawa taught the invention substantially as claimed in claim 1. Judd further taught that the initial value is a linear function of the desired number of node hops (col.7, lines 64-67).

14. As per claim 11, Judd, Saleh and Matsuzawa taught the invention substantially as claimed in claim 1. Judd further taught that wherein at least one node in the linear chain is a regenerator element (col.2, lines 31-39, col.8, 43-50).

15. As per claim 13, Judd, Saleh and Matsuzawa taught the invention substantially as claimed in claim 1. Judd further taught that the chain network comprises a portion of a ring network (col.2, lines 26-31, col.5, lines 61-67, col.6, lines 1; loop).

16. Claims 12, 15-17 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Judd, Saleh and Matsuzawa as applied to claims 1, 14 and 18 above, and further in view of "Official Notice".

17. As per claim 12, Judd, Saleh and Matsuzawa taught the invention substantially as claimed in claim 1. Judd, Saleh and Matsuzawa did not specifically teach that the chain network is a virtual chain network. Official Notice is taken that the limitations narrowed by this claim is considered obvious and furthermore a matter of design choice, since applicants have not disclosed that the claimed limitations solve any stated problem or are of any particular purpose and it appears that the invention would perform equally well without these claimed features. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to efficiently utilize the claimed method in all "types of presenting chain network". Official Notice is taken that it would have been obvious to implement Judd, Saleh and Matsuzawa's teaching to all applicable network environments. It would have been obvious to one of ordinary skill in the art at the time the invention was made to expand Judd's teaching of using hop counters to transmit packets in suitable networks such as virtual network, ring network or other applicable network.

18. As per claims 15 and 19, Judd, Saleh and Matsuzawa taught the invention substantially as claimed in claims 14 and 18. Judd further taught the message packet to comprise a status query message and further request the destination node to send a status message packet back to the source node (col.11, lines 15-19). Judd, Saleh and Matsuzawa did not specifically teach the message packet is sent back along the chain having a relative source address field and a counter. However, since Judd taught to use identification field and counter in the message packet, program initial values in hop counter, adjusting the counter by the preselected step in value at each node that the message packet is forwarded to, and accepting the message packet when the counter reaches the initial value (col.2, lines 3-18, 32-41, col.7, lines 64-67, col.8, lines 44-61) and Saleh taught to adjust the counting by increment the counter, it would is obvious to implement such teachings in the status message packet as well (destination node becomes initiator). Official Notice is taken that it would have been obvious to implement the same teaching of using counter and initial value for returning messages in Judd, Saleh and Matsuzawa's system (sending package to reverse direction). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include Judd, Saleh and Matsuzawa's teachings of using identification field, counter, counter adjusting and packet accepting in not only the message packet sent from the source node, but also the status message packet sent from the destination node back to the source node as well.

19. As per claim 16, Judd, Saleh and Matsuzawa taught the invention substantially as claimed in claim 15. Judd further taught that wherein at least one node in the linear chain is a regenerator element (col.2, lines 31-39, col.8, 43-50).

20. As per claim 17, Judd, Saleh and Matsuzawa taught the invention substantially as claimed in claim 15. Judd further taught to:

a. selecting a return message (col.11, lines 15-19);

b. transmitting the return message in the direction to the source node (col.1, lines 15-19);

c. incrementing the second counter by the preselected step in value at each node that the message packet is forwarded to (col.2, lines 3-18, 32-41, col.8, lines 44-61); and

d. accepting the return message packet at the source node when the second counter reaches the initial value (col.2, lines 3-18, 32-41, col.7, lines 64-67, col.8, lines 44-61).

21. As per claim 20, Judd, Saleh and Matsuzawa taught the invention substantially as claimed in claim 19. Judd, Saleh and Matsuzawa did not specifically teach to send a plurality of the status query messages to a plurality of destination nodes, the destination nodes corresponding to different initial values indicating that the destination nodes are each a different number of node hops from the source node and to receive the status message packets from responding destination nodes; and determining the relative distance of responding nodes as a function of the

initial value corresponding to each responding node, wherein a fault is isolated to a part of the network subsequent to the responding active node the greatest number of node hops from the source node. However, it would have been obvious to send a plurality of status query message to a plurality of destination nodes and to have the destination nodes to send status message back since Judd taught to send query message to a destination node (col.2, lines 6-9, col.11, lines 15-19) and to send acknowledgement message back to the source node (col.1, lines 15-19). Furthermore, it would have been obvious to use the initial value corresponding to nodes that are each a different number of node hops from the source node to determine the relative distance of them where network fault can be isolated subsequent to the farthest node away from the source node. Official Notice is taken that it would have been obvious to send a plurality of status query message to a plurality of destination nodes. It would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the source node in Judd, Saleh and Matsuzawa's method to send multiple status query message to multiple destination nodes to obtain status message and determine relative distance of the nodes.

22. As per claim 21, Judd, Saleh and Matsuzawa taught the invention substantially as claimed in claim 14. Judd further taught the method to comprise the steps of:

a. Sending a first status query message packet requesting a return status message from a destination node at least one node hope from the source node (col.11, lines 15-19);

b. Sending at least one subsequent status query message packet requesting a return status message from another destination node corresponding to a different number

of node hops from the source node and recording whether the return status message is received at the source node; (col.11, lines 15-19; with different destination).

23. Judd, Saleh and Matsuzawa did not specifically teach to detect a fault in a linear chain of regenerator nodes using the relative address protocol; and determine the node the greatest number of node hops from the source node replying to the status query message directed to it, wherein a fault is isolated to a portion of the chain network subsequent to the node the greatest number of node hops from the source node returning the corresponding status message. However, it would have been obvious to use the initial value corresponding to nodes that are each a different number of node hops from the source node to determine the node the greatest number of node hops from the source node where network fault can be isolated subsequent to it. Official Notice is taken that it is obvious that a fault may be detected when subsequent portion of the network of the node the greatest number of node hops from the source node is reached. It would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the source node in Judd, Saleh and Matsuzawa's method to send multiple status query message to multiple destination nodes to obtain status message and determine relative distance of the nodes and to detect faults when exceeds greatest number of node hops from the source node.

Response to Arguments

24. Applicant's arguments filed 12/22/2006 have been fully considered but they are not persuasive.

25. In the remark, applicant argued (1) Neither Judd nor Saleh teach or suggest the use of both a relative destination address field and a relative source address field nor a directional code corresponding to the port from which the message packet is sent to along the chain with a counter for counting the number of nods that the message packet has encountered.

26. Examiner traverse the argument that:

The arguments were previous raised by the applicant and were addressed by the examiner.

As to point (1), Judd taught to use an address field that includes the functions of applicant's claimed source address field and destination address field. Judd taught that the address field is programmed with an initial value (0h) at the source node, a counter (col.7, lines 55-67: hop count), and a directional code corresponding to a port of the source node from which the message packet is to be sent along the linear chain network (col.6, lines 33-35, 38-46, 53-55: selecting channel). Since Judd taught to use one address field to include both of the claimed address fields' functions, it is clear that Judd taught the claimed address fields, especially when the claims failed to define that the two address fields cannot be of the same field.

Because Applicants have failed to challenge any of the Examiner's "Official Notices" stated in the previous office action in a proper and reasonably manner, they are now considered as admitted prior art. See MPEP 2144.03

Conclusion

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenny Lin whose telephone number is (571) 272-3968. The examiner can normally be reached on 8 AM to 5 PM Tue.-Fri. and every other Monday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on (571) 272-3913. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ksl
February 22, 2007

BUNJOB JARDENCHONWANIT
SUPERVISORY PATENT EXAMINER